THE GLOBAL PARTNERSHIP ON
Wealth Accounting and the Valuation of Ecosystem Services

Policy applications of SEEA

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Outline

- What is WAVES?
- Where have the accounts been more useful?
  - Indicators for monitoring sustainable development
  - Energy and air pollution: cleaner, more efficient production
  - Stocks of minerals & energy: fiscal rules, managing mineral revenues for long term growth
  - Land and ecosystems: balancing the needs of tourism, commercial and subsistence agriculture, water supply, soil erosion, and other uses
  - Water accounting: managing a scarce resource

What is WAVES?

- Global partnership that aims to **promote sustainable development** by ensuring that the national accounts used to measure and plan for economic growth include the value of natural capital.

- WAVES is about **mainstreaming natural capital accounting** in national statistical systems and development planning

- Looking for countries where **institutionalization** is likely rather than pilot/one off studies
    - Staffed and resourced to produce accounts on a regular basis
    - Complete with appropriate institutional and legal arrangements

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Who is involved?

- **Core Implementing Country Partners:** receiving substantial technical support from WAVES multi-donor Trust Fund (5 countries so far)
- **Contributing Donor Partners:** UK, Japan, Norway, France, the Netherlands, Germany, EC, Denmark, Switzerland

- **Participating Partners:** countries with other sources of funding who have endorsed the NCA communique, UN & international organizations, NGOs, private sector, academics and others

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Why do Natural Capital Accounting ?

Better indicators for **monitoring sustainable development:** Wealth and Adjusted Net Savings

Better tools for **managing natural capital to promote growth and poverty reduction**

- Weighing tradeoffs for water, land use
- Prioritizing investments in resource management, protected areas

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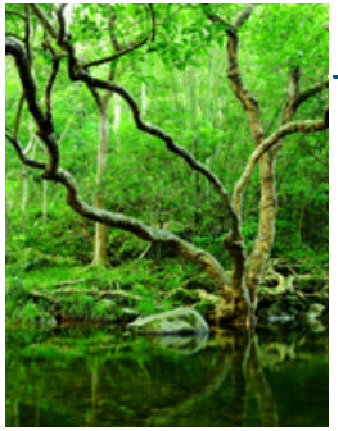
How do we do NCA?

UN's System of Environmental and Economic Accounting (SEEA)

- Part 1. SEEA-Central Framework
- Adopted by UN Statistics Commission as **International Statistical Standard** in February 2012



Also,

- Part 2. SEEA Experimental Accounts for Ecosystem, 2013
- Part 3. SEEA – Applications and Policy Uses, 2013

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1. Indicators of sustainable development

…Is GDP growth sustainable or are we just "living off our (natural) capital?"

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Sustainable Development and Wealth

We don't judge a company solely on the basis of its income statement—look at both ***income*** **and** ***balance sheet***.

- Increasing assets (wealth) support *long-term* growth.
- In the short term, income can appear to grow by liquidating assets, but this undermines long-term growth.

Why do we assess country economic progress on the basis of national income, GDP alone? (J. Stiglitz, Nobel prize, economics)

The source of income and well-being is **wealth,** broadly defined to include

  - Manufactured capital, Natural capital, 'Intangible' capital (human capital and social capital)

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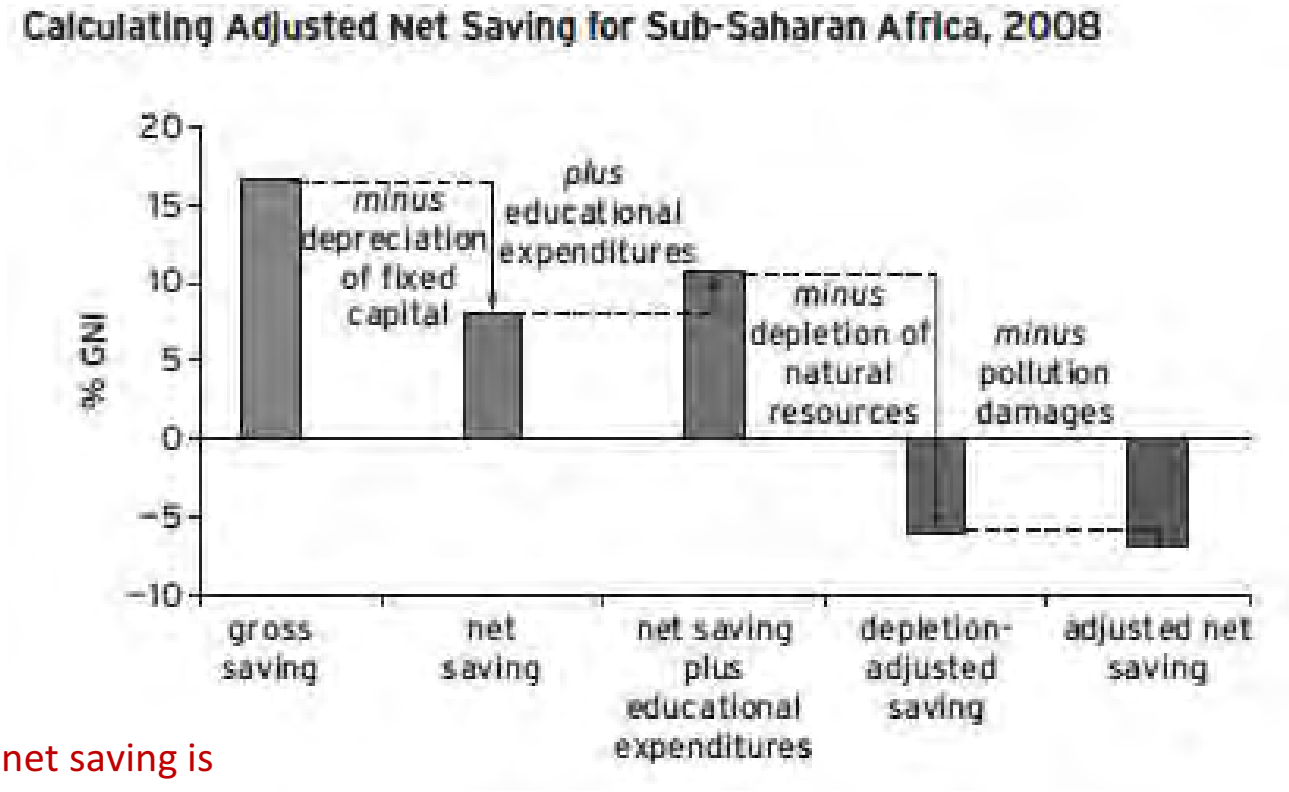
Measuring country sustainability through changes in wealth—**Adjusted Net Savings**

ANS measures gross saving adjusted for

- Depreciation of fixed capital
- Human capital investment,
- Resource depletion
- Pollution damages



Key question is whether adjusted net saving is positive or negative

→Negative saving indicates unsustainability

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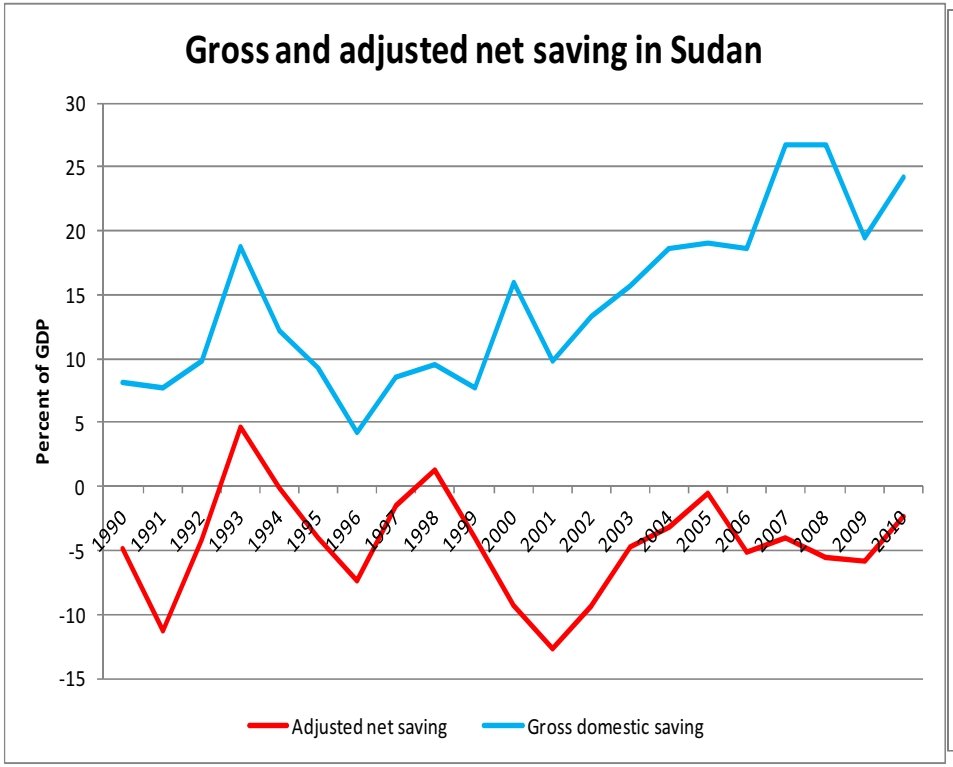
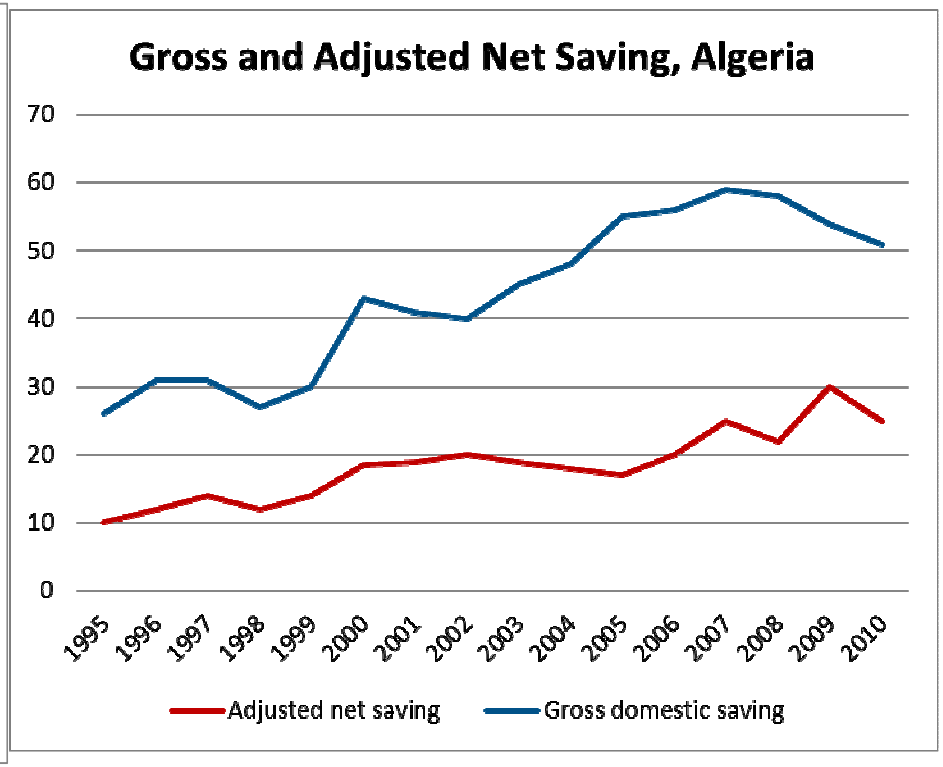
Examples using Adjusted Net Savings: Sudan and Algeria

In SUDAN, finding oil boosted gross saving, but not enough to offset depletion of oil…ANS is negative

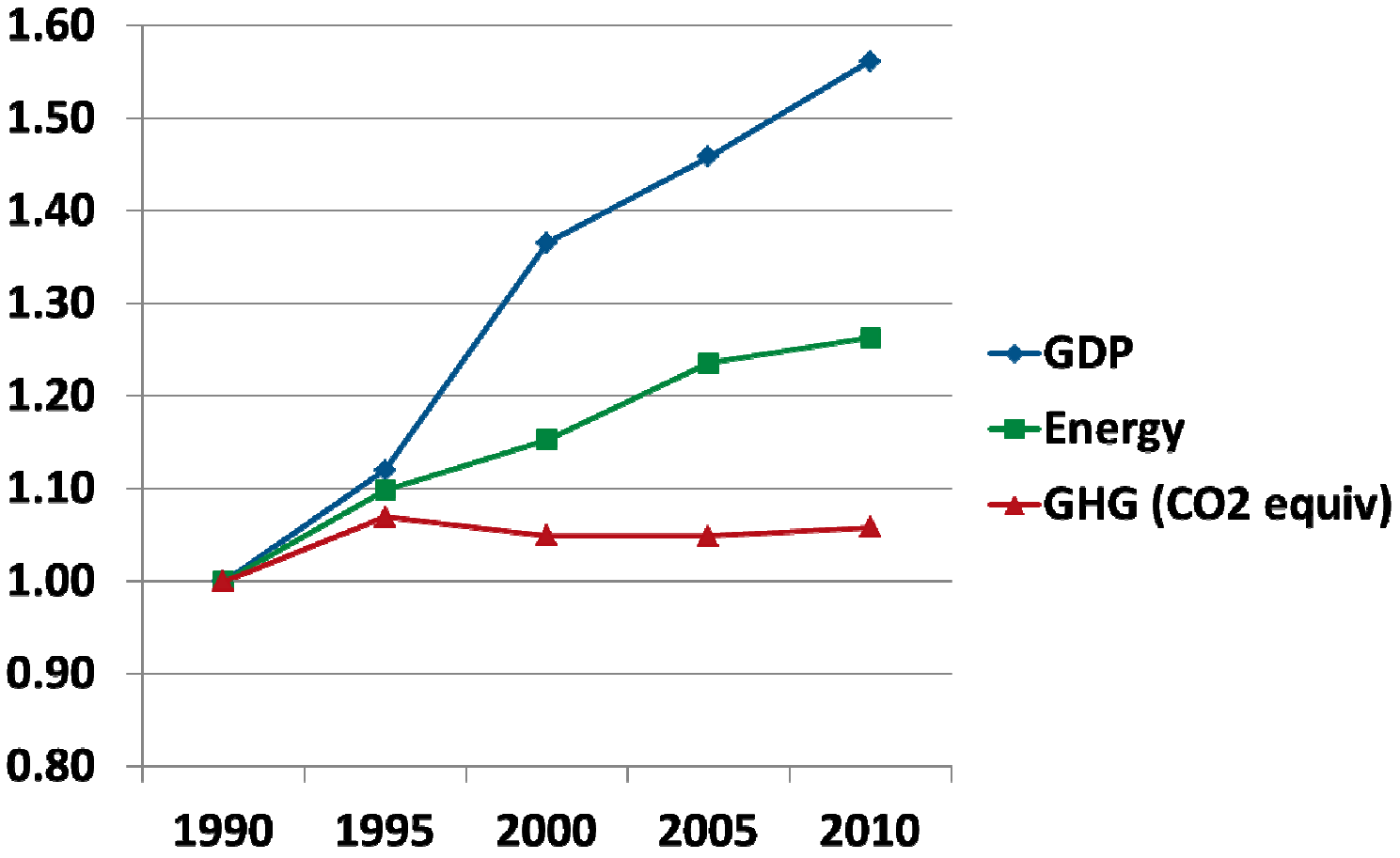
ALGERIA: Public + private savings more than offsets depletion. ANS is positive



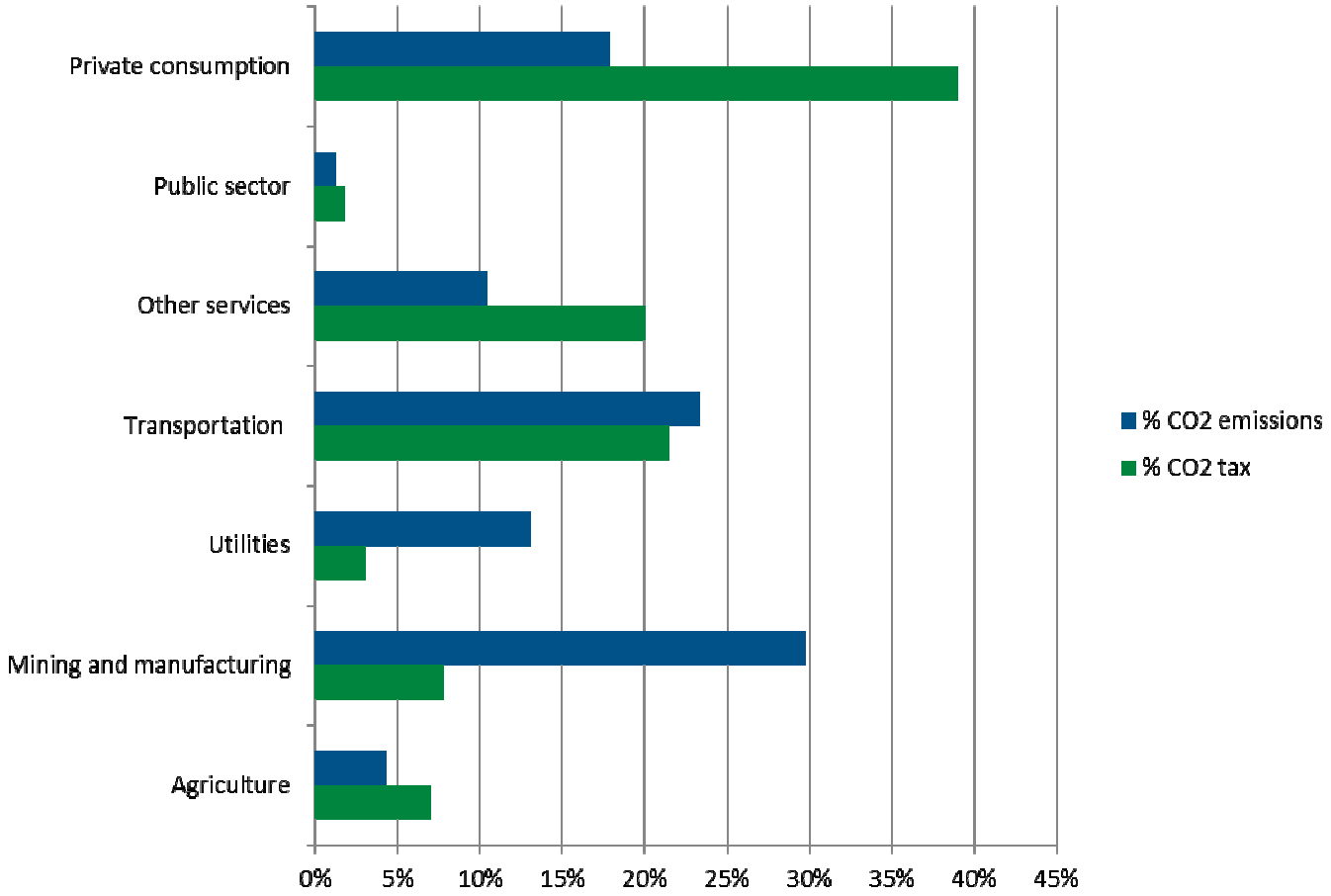


2. **Energy and air pollution accounting** for cleaner, more efficient production

Decoupling economic growth from energy use and GHG in the Netherlands



Carbon emissions and carbon taxes by sector in Sweden



Energy and pollution management:
Using energy accounts with economic models

- Impacts of a carbon tax on prices and competitiveness of exports
- Impacts of eliminating energy subsidies
- Designing a low-carbon economy

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4. Resource-rich economies: managing rents from minerals and energy

Development Challenge: *transform non-renewable resources into other forms of capital*

- Recovery of rent by government through appropriate taxes, royalties

  Indicator: % of resource rent obtained by government

- Manage rents for long term growth—
  - Investment to compensate for depletion
  - Stabilization fund

  Indicator: Comprehensive wealth or Adjusted Net Savings

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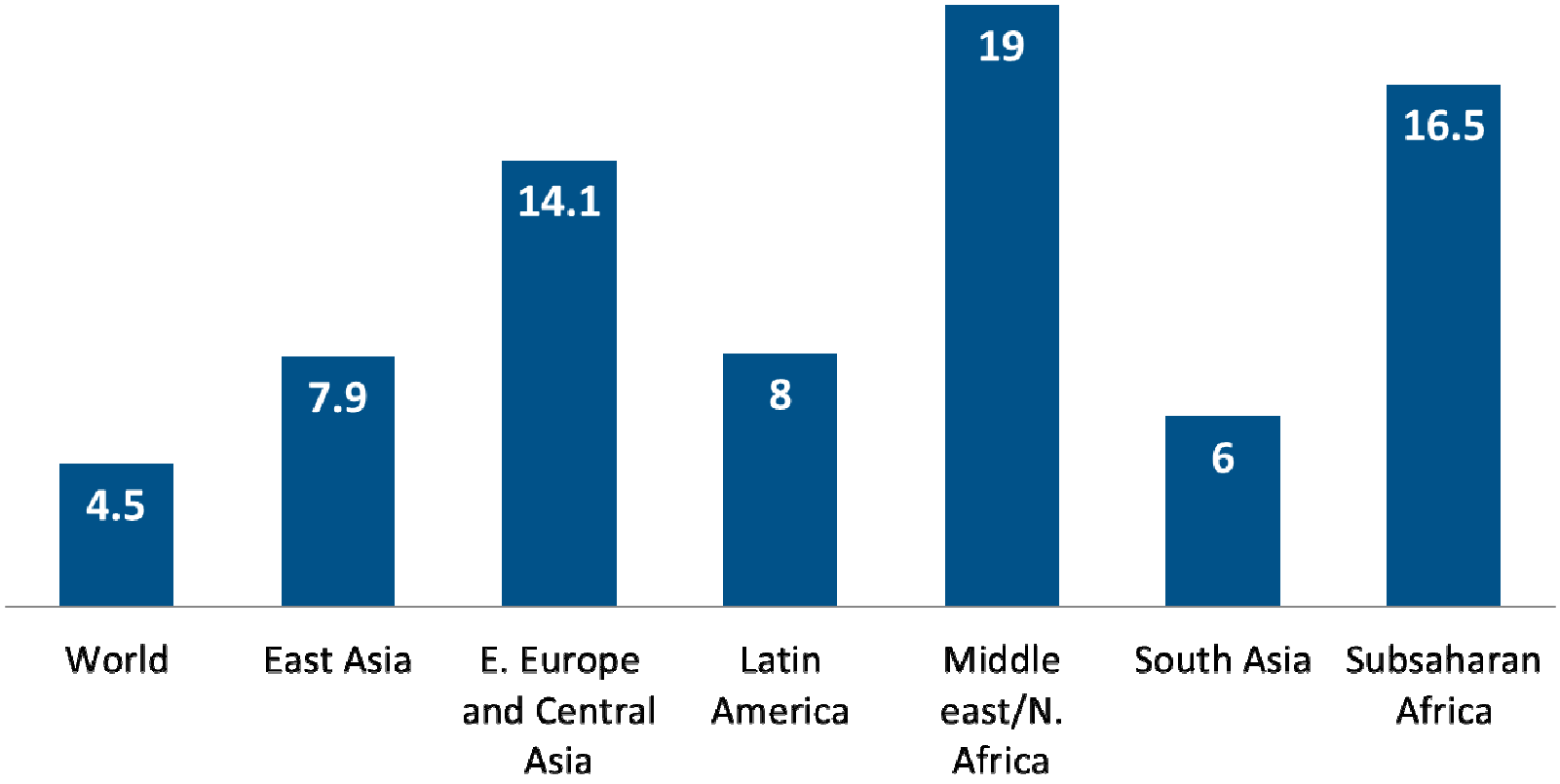
Natural resource rents –a major source of income
(% of GDP, 2012)



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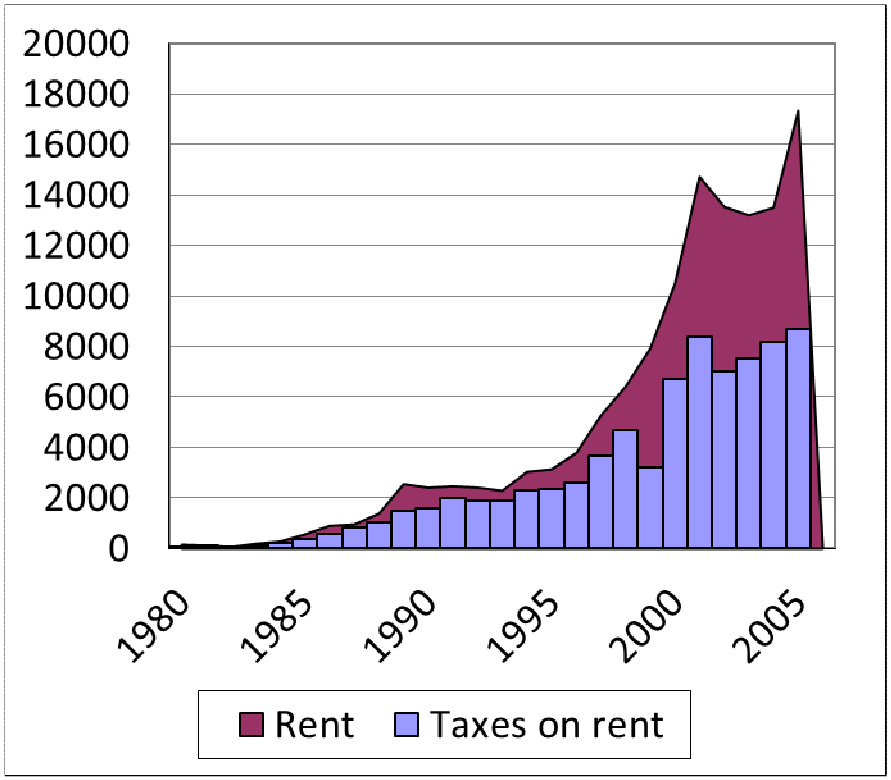
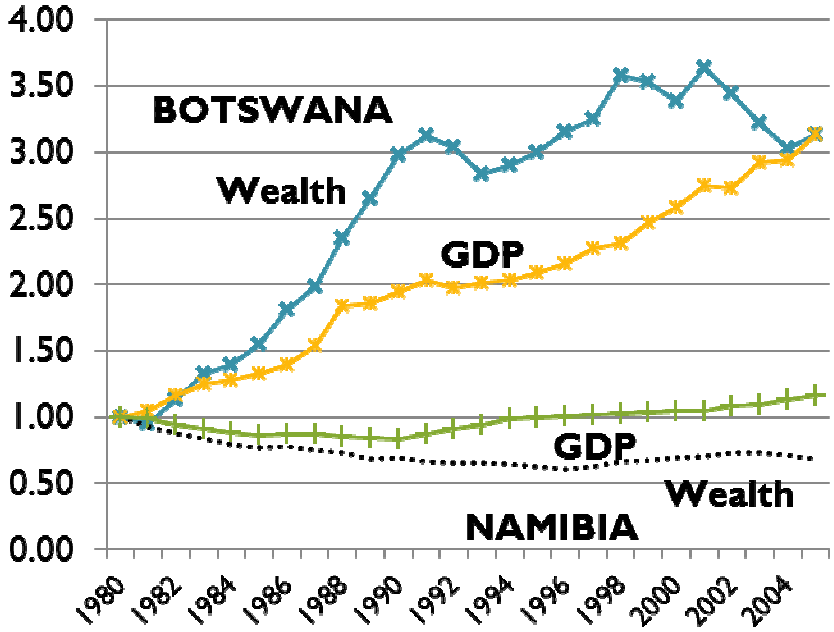
Botswana's mineral rents and long term growth

1. Govt. recovers mineral revenues/rent



2. Investment of mineral revenues build wealth and income

(index of real, percapita growth in wealth, GDP)



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5. Land and ecosystems:

….taking into account non-market ecosystem services like coastal protection and ‘externalities’ like pollution

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Making informed decisions about mangrove forests in Thailand

MARKET value of mangrove:

under current use

$864 per ha (timber and non-timber)

Additional NON-MARKET value:

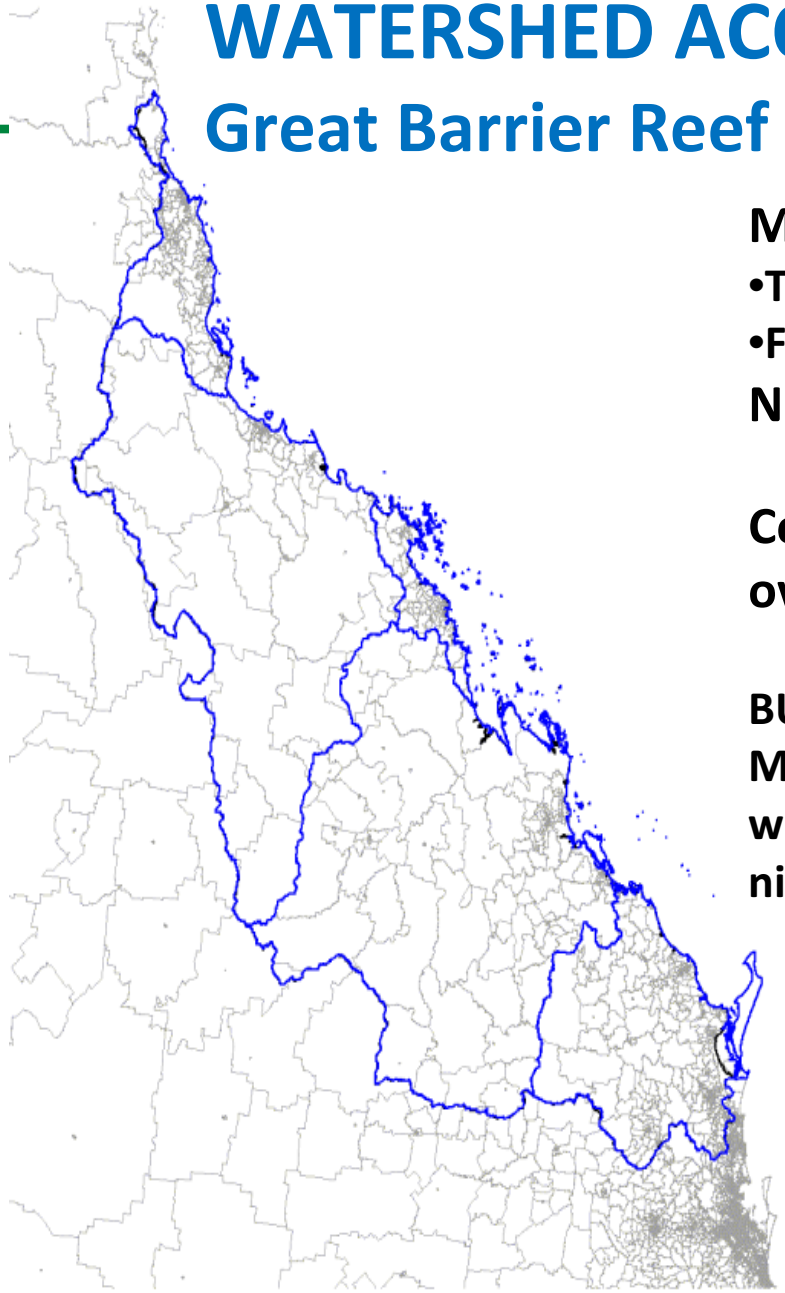
: **$16,861** per ha--Coastal protection from storms

MARKET value of mangrove:

if converted to shrimp farm

$9,632 per ha (shrimp)

WATERSHED ACCOUNTS: protecting Australia's Great Barrier Reef



Major asset, source of income and jobs from:

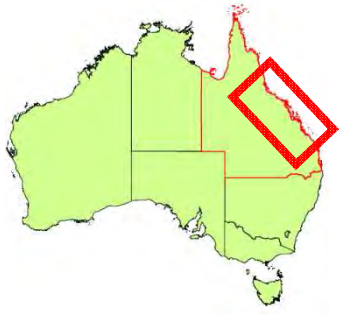
- **Tourism**
- **Fishing industry**

National icon—symbol of Australian identify

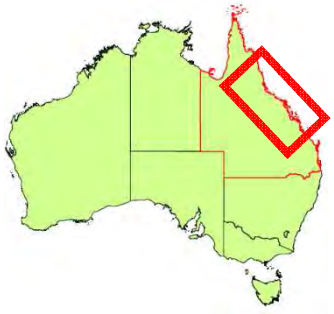
Coral reef managed well (protected from overfishing, overuse by tourism)

BUT,

Major threats from UPSTREAM activities in the watershed—sediment, pollutants (phosphorus, nitrogen) mainly from Agriculture



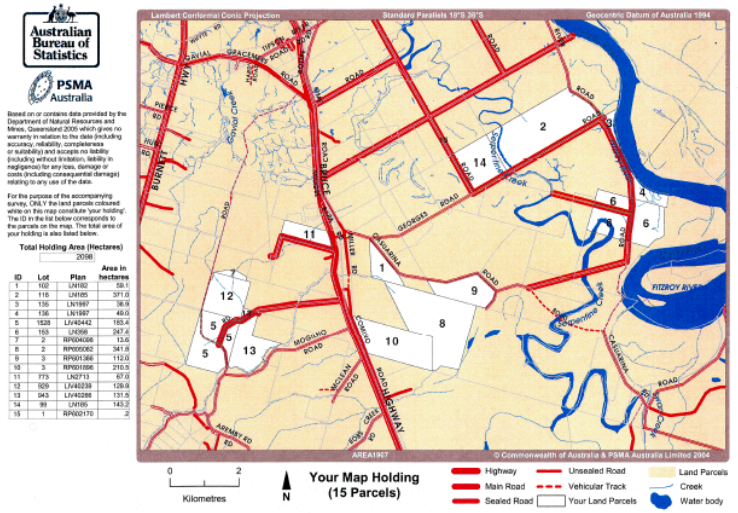
Ecosystem Accounts for the Great Barrier Reef Catchments



Manage watershed by linking agricultural practices and land use, jobs & income to water quality (sediment, chemicals), impact on GBR.

→Assess

- costs to the reef from current land use (impact on fishing, tourism)
- economic impact of alternative land uses (agriculture jobs, income)



Survey forms included maps of individual land parcels

6. Water accounting

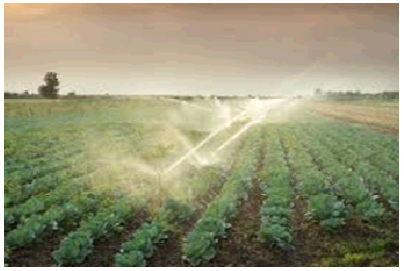
Country examples

- Netherlands
- Australia
- Botswana, South Africa
- Colombia
- Mexico
- Guatemala

NETHERLANDS - Water issues

Safety, protection against flooding

Water management: excess of water



Water management: water resources and water use

Water pollution

Water quality

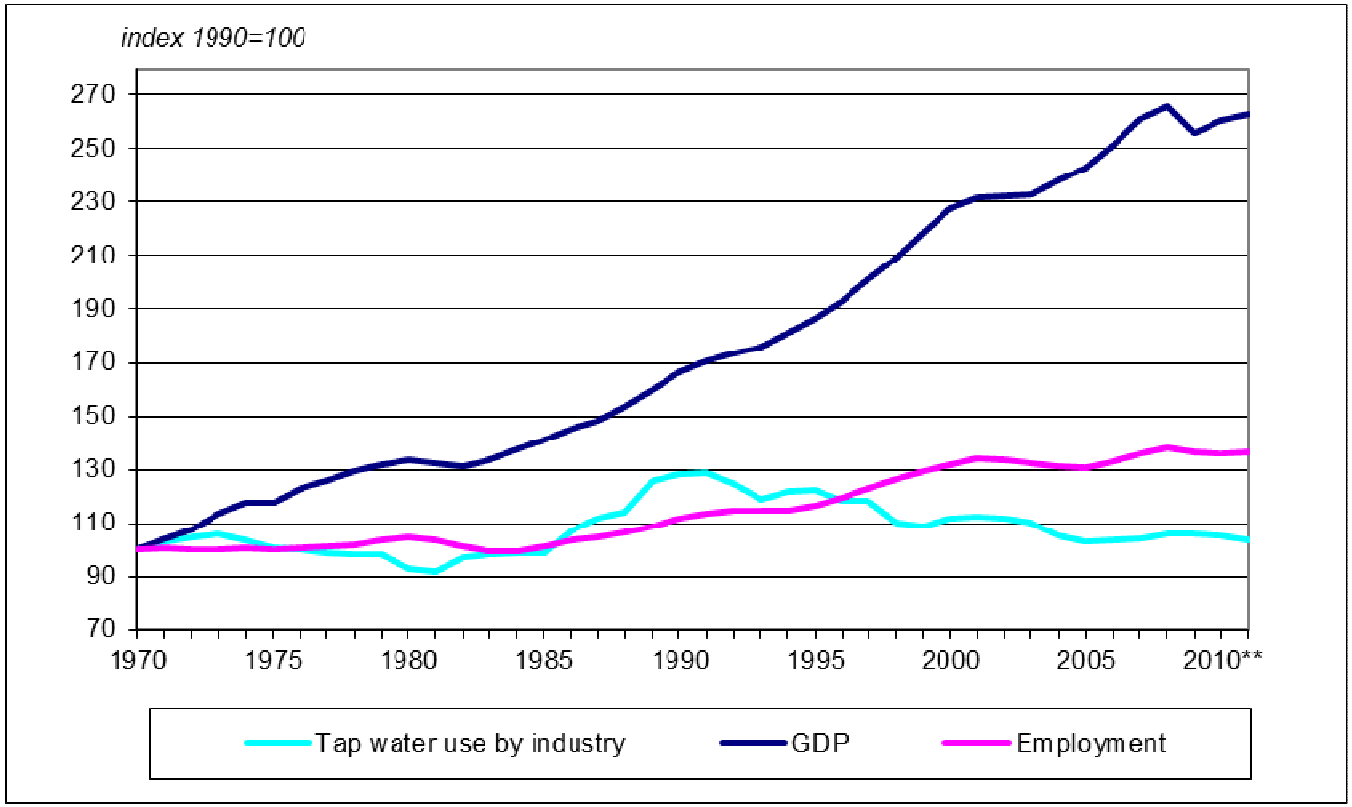
NETHERLANDS - Policy demands

- **Main users:**
  - Ministry of infrastructure and environment,
  - water boards,
  - water companies,
  - Eurostat, other etc.
- **European Union Water Framework Directive**
- **Marine Strategy Framework Directive**
  - Initial Assessment asks for 'Economic analysis of marine waters'
- **Climate change policies** → expenditure for climate change mitigation / adaptation
- **Indicators for green growth**

NETHERLANDS

Is there decoupling between water use and economic growth ?

Volume change GDP, employment and tap water used for production

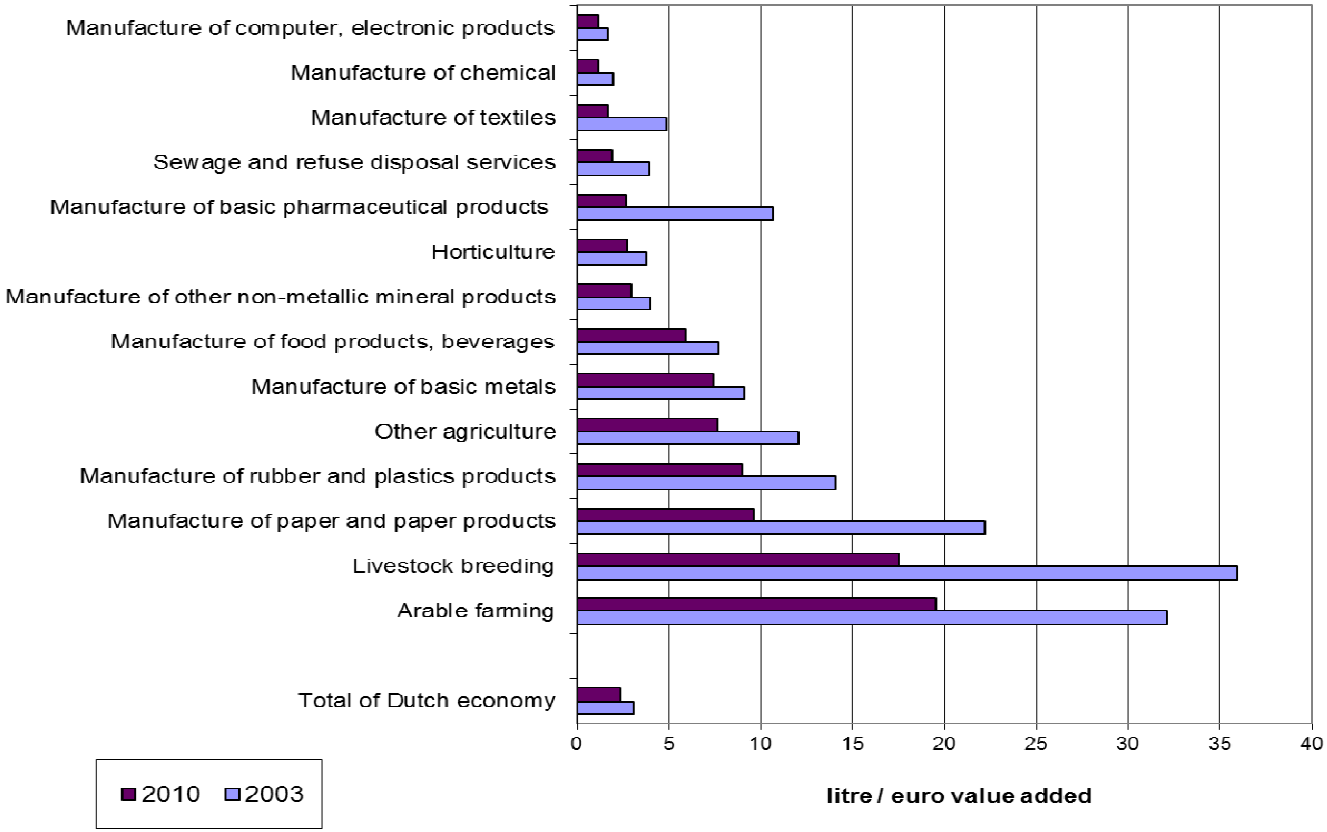


Source: CBS

NETHERLANDS

Water Profiles: What are the most important users of water? Is their water productivity improving between 2003 and 2010?

(liter/ euro of sector value-added)



Source: CBS

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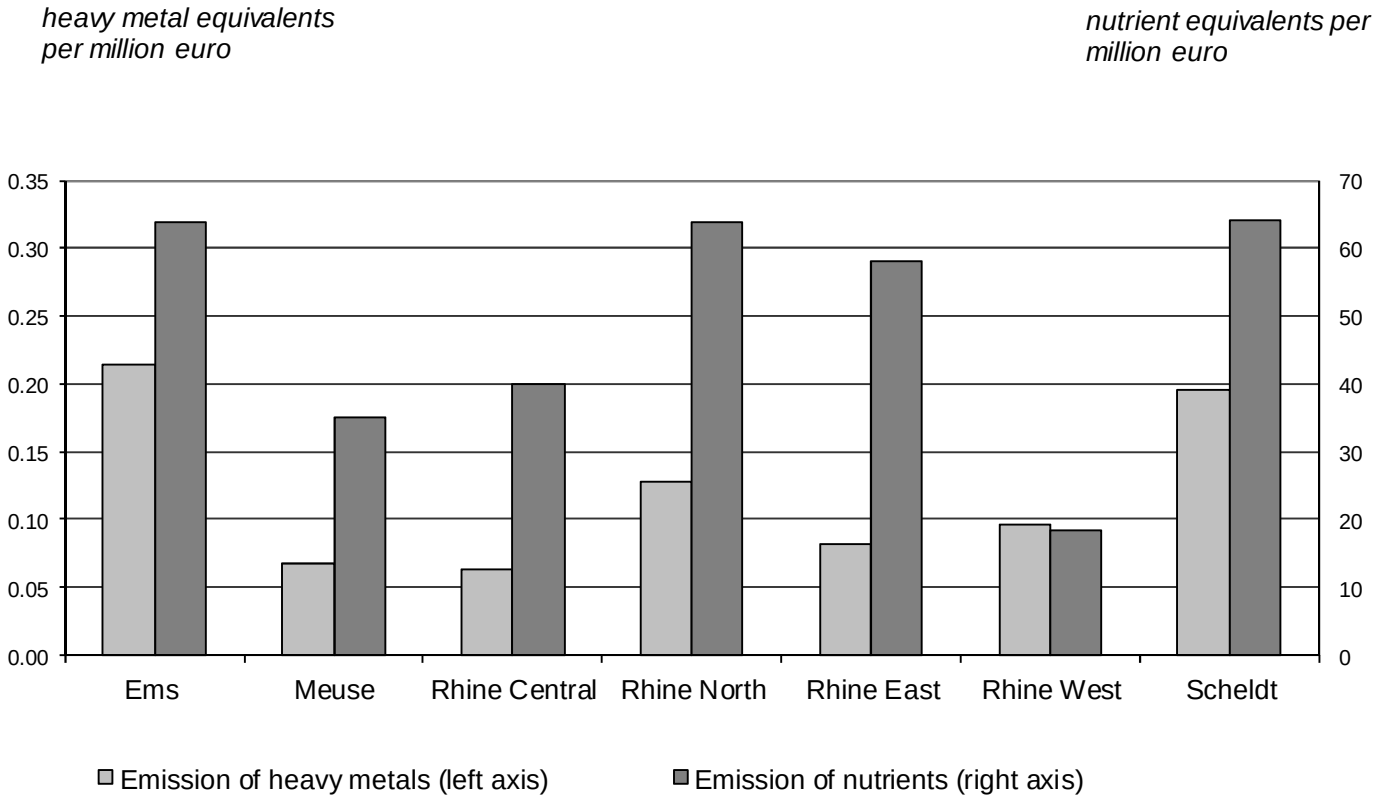
Are there regional differences in emission intensity ?

Emission-intensity per river basin (only producers)



Source: CBS

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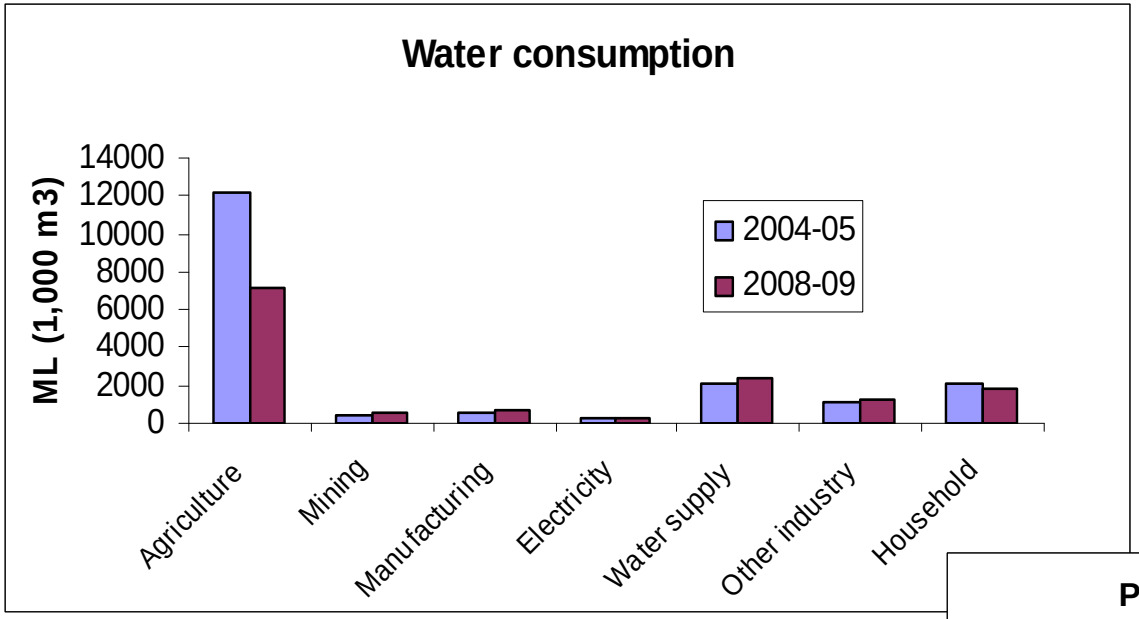
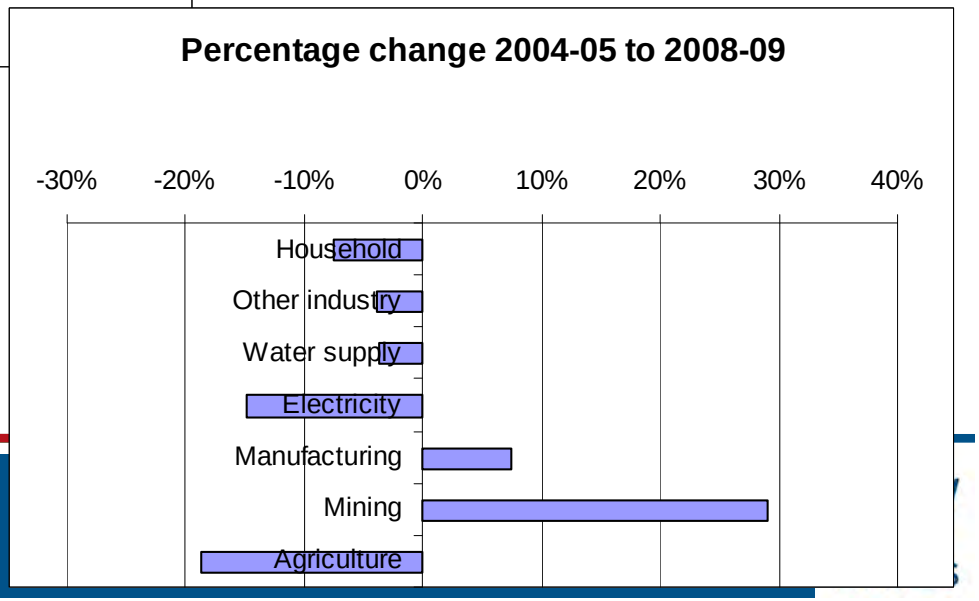
Australia:

Increasing water efficiency by sector, 2004 & 2008





Source: ABS

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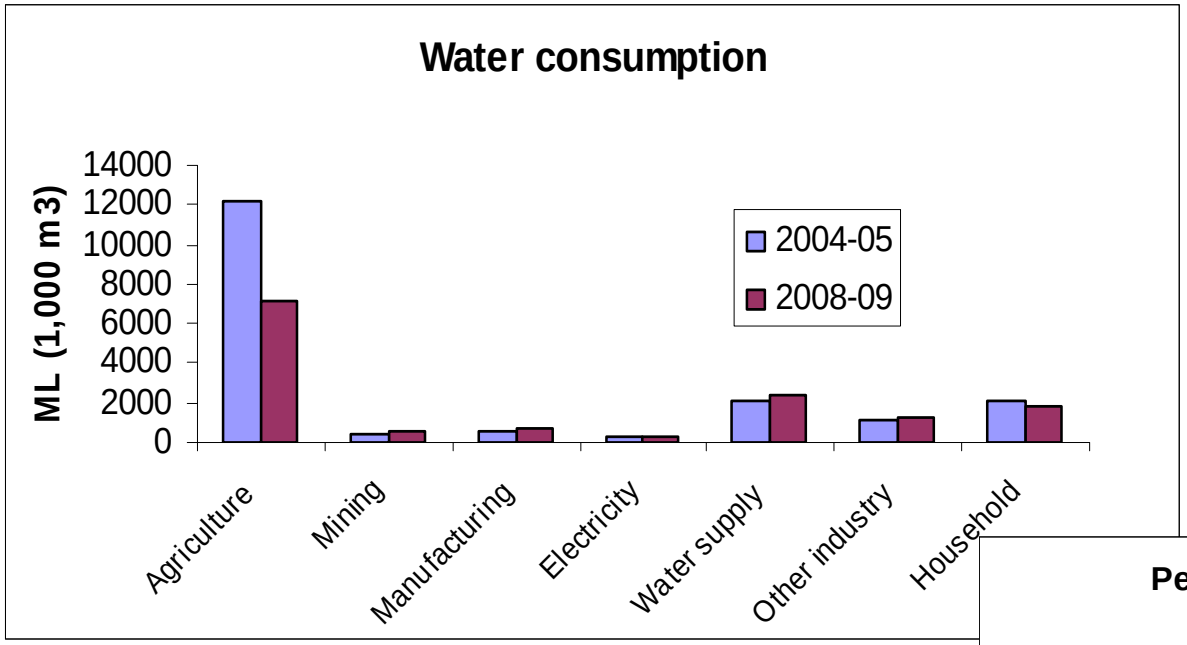
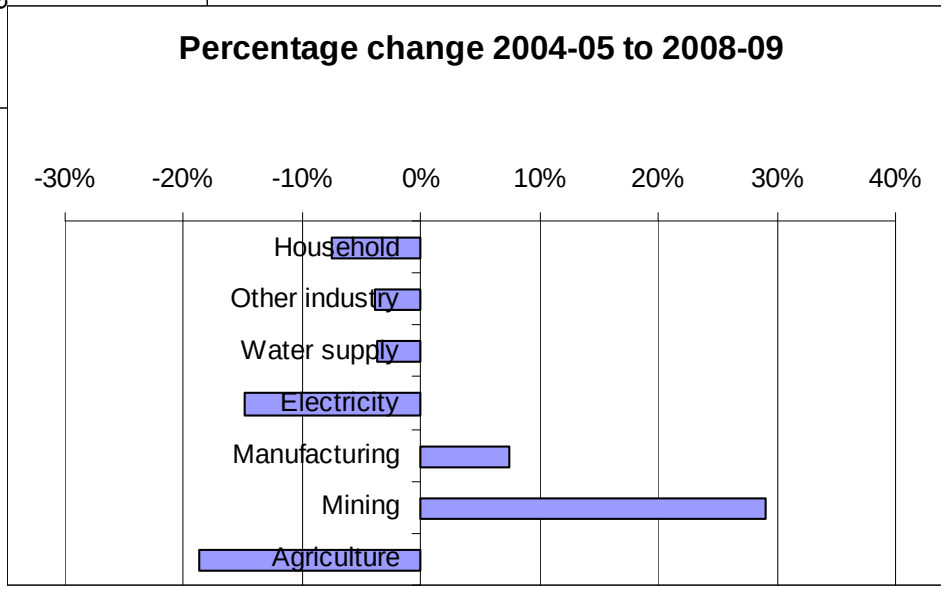
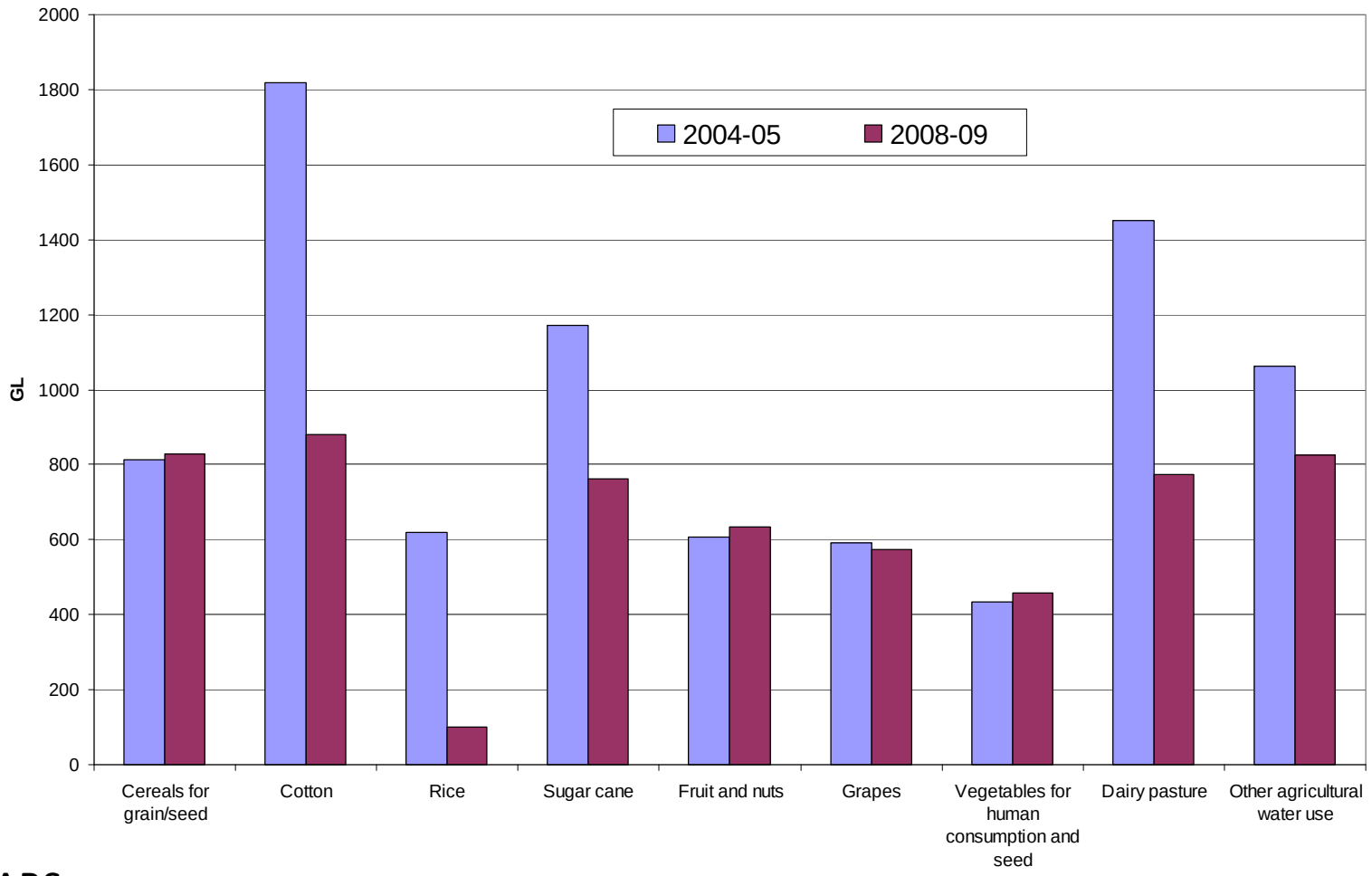




Source: ABS

A closer look at water use for Agriculture in

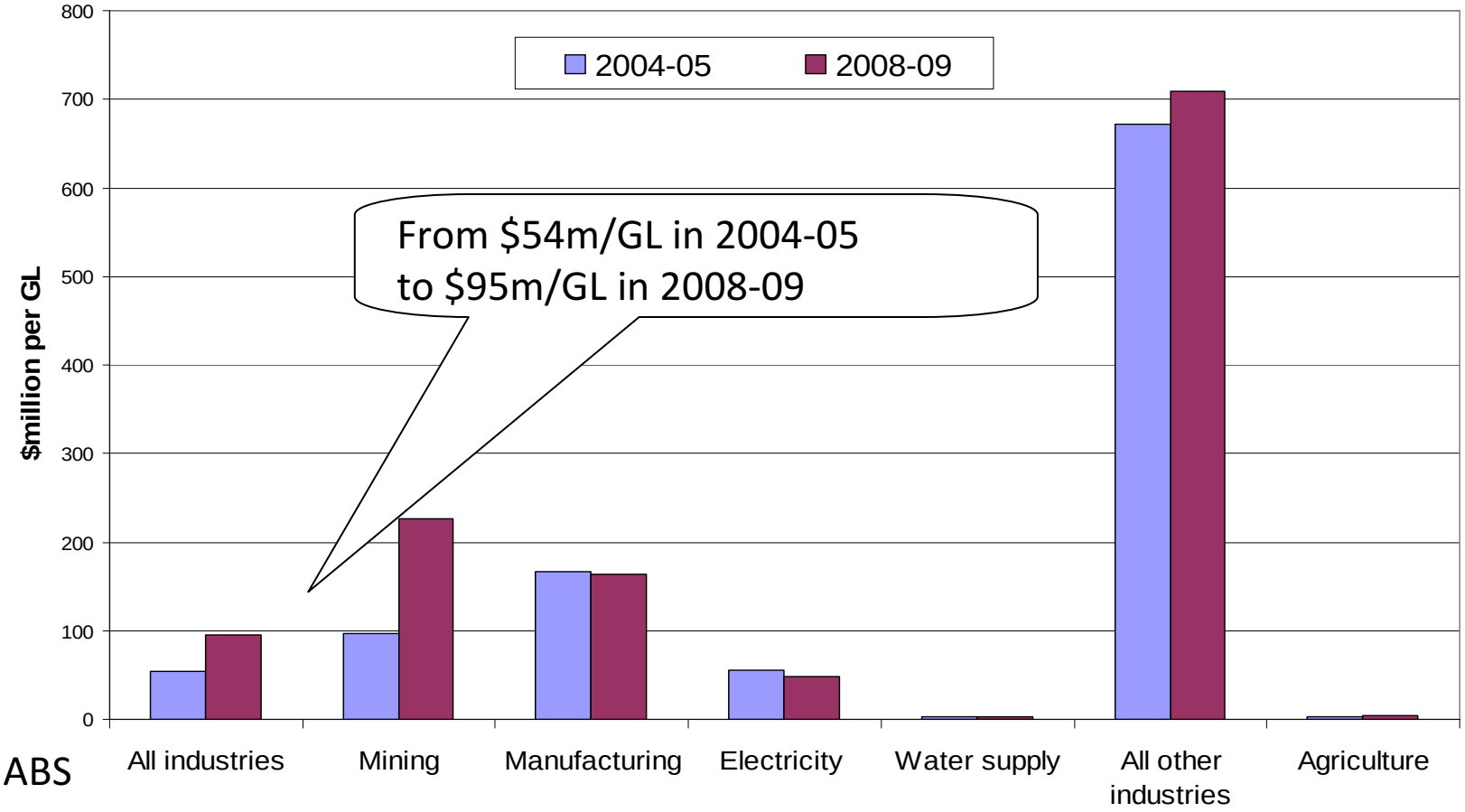


Source: ABS

AUSTRALIA:

Are scarce water resources allocated efficiently?

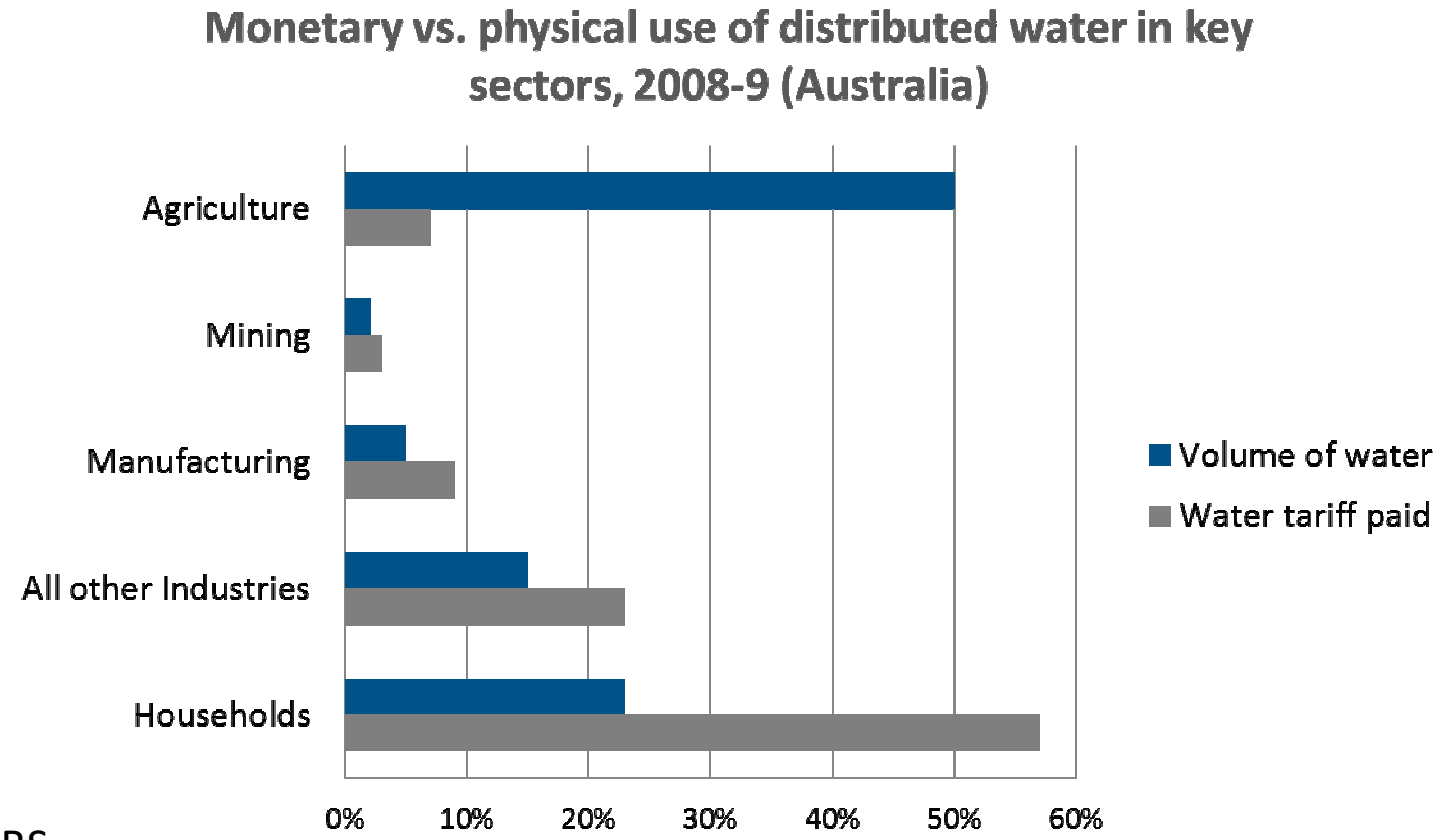
Water Productivity by sector, 2004 & 2008 ($GDP per GL)



Source: ABS

AUSTRALIA:

Who uses water and who pays for water?



Source: ABS

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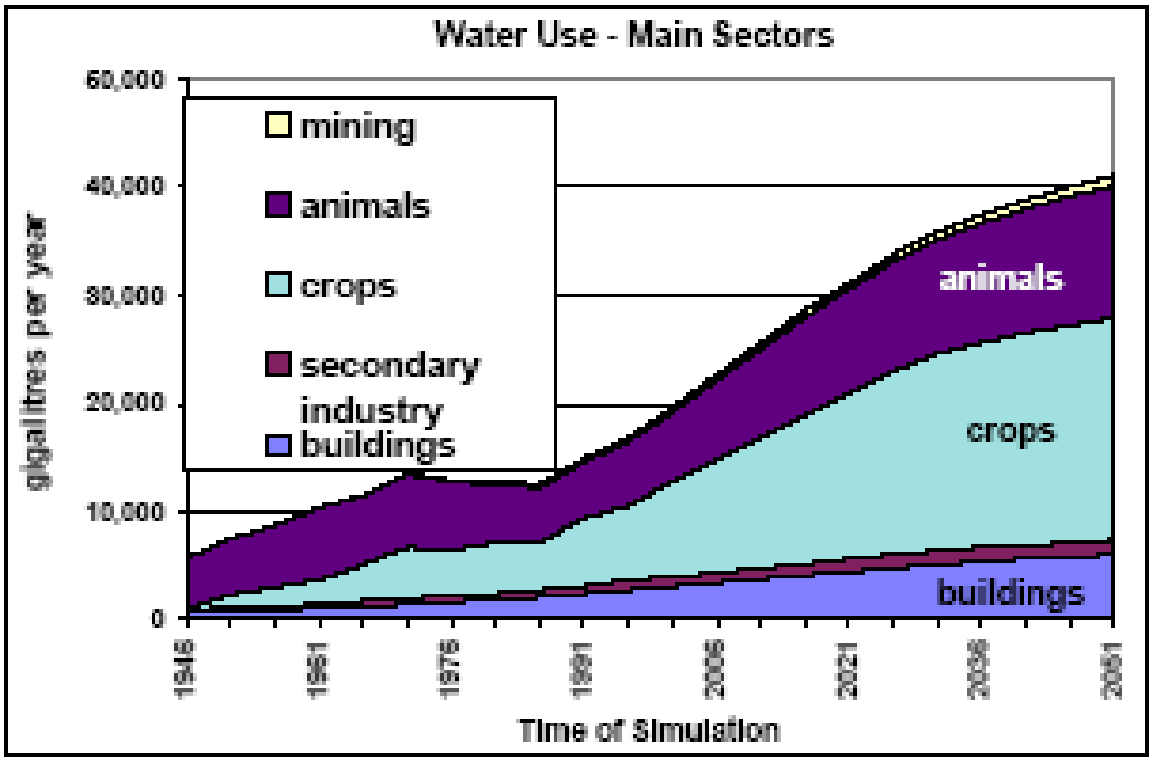
AUSTRALIA

Projecting future water demands
Australia, 2050



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Benefits from Water Policy Reform: Pricing Reform

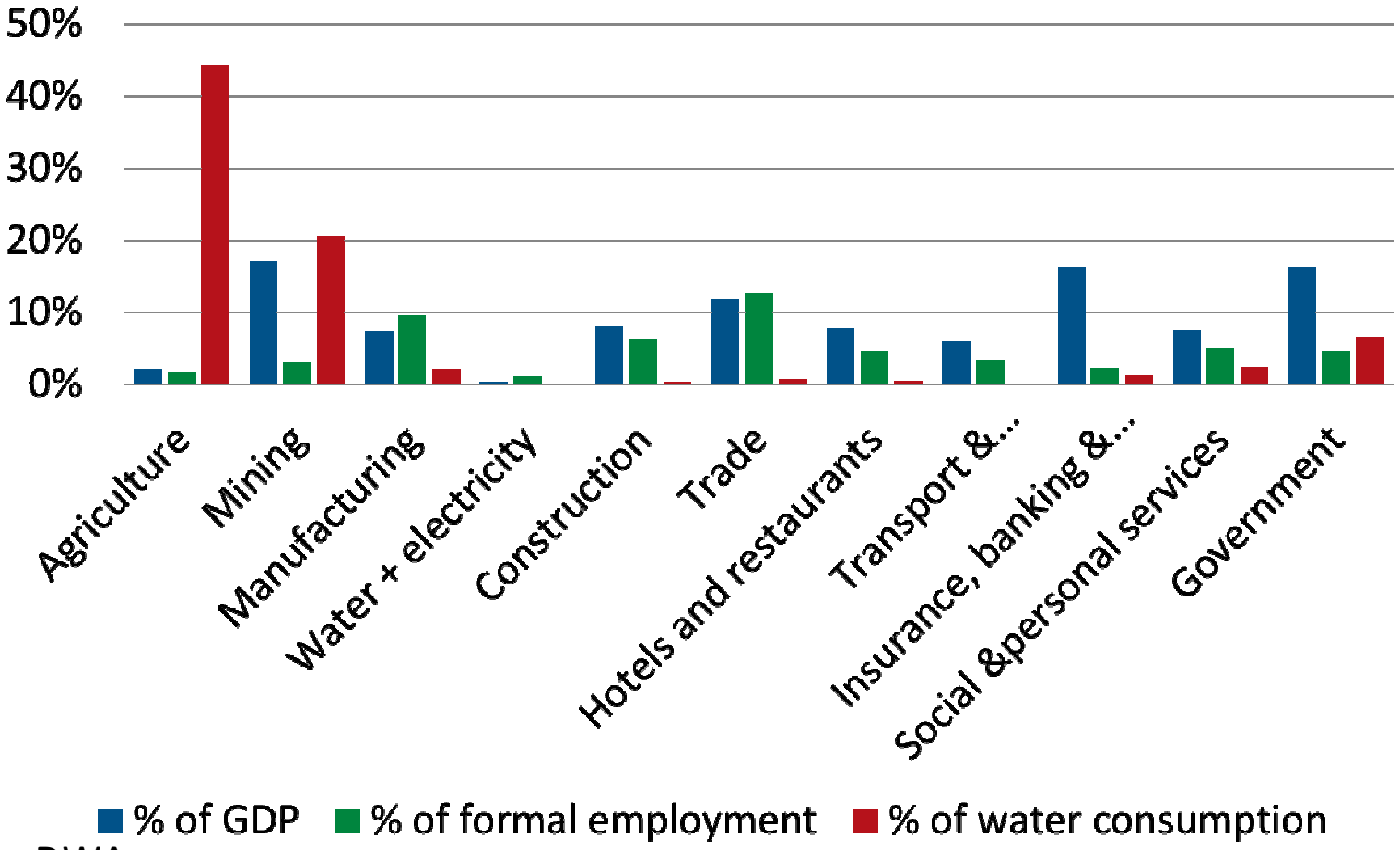
Murray-Darling River Basin Australia

Based on historical water use & price data, simulated impact on GDP of doubling water prices and the expected increases in water use efficiency (WUE) of 1-2%

	Increase in GDP, A$million	
	1% increase WUE	2% increase WUE
Irrigated agriculture	-24	78
Dryland agriculture	-51	-112
Food and fibre processing	44	97
Other industries	262	410
Total impact on GDP	253	521

BOSTWANA

Are scarce water resources allocated efficiently?



Source: DWA

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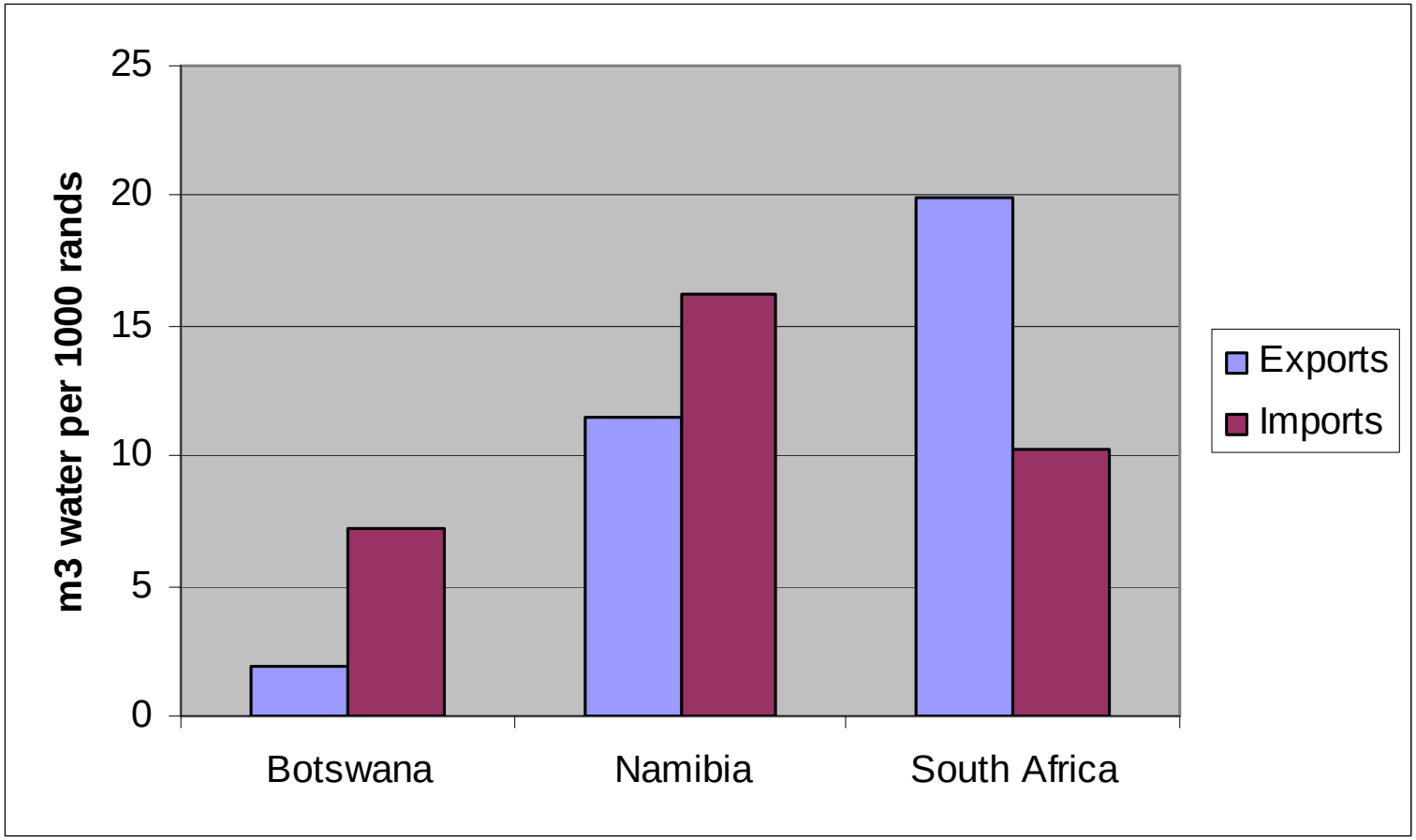
Water intensity of trade

(m3 per 1000 rands of imports or exports)

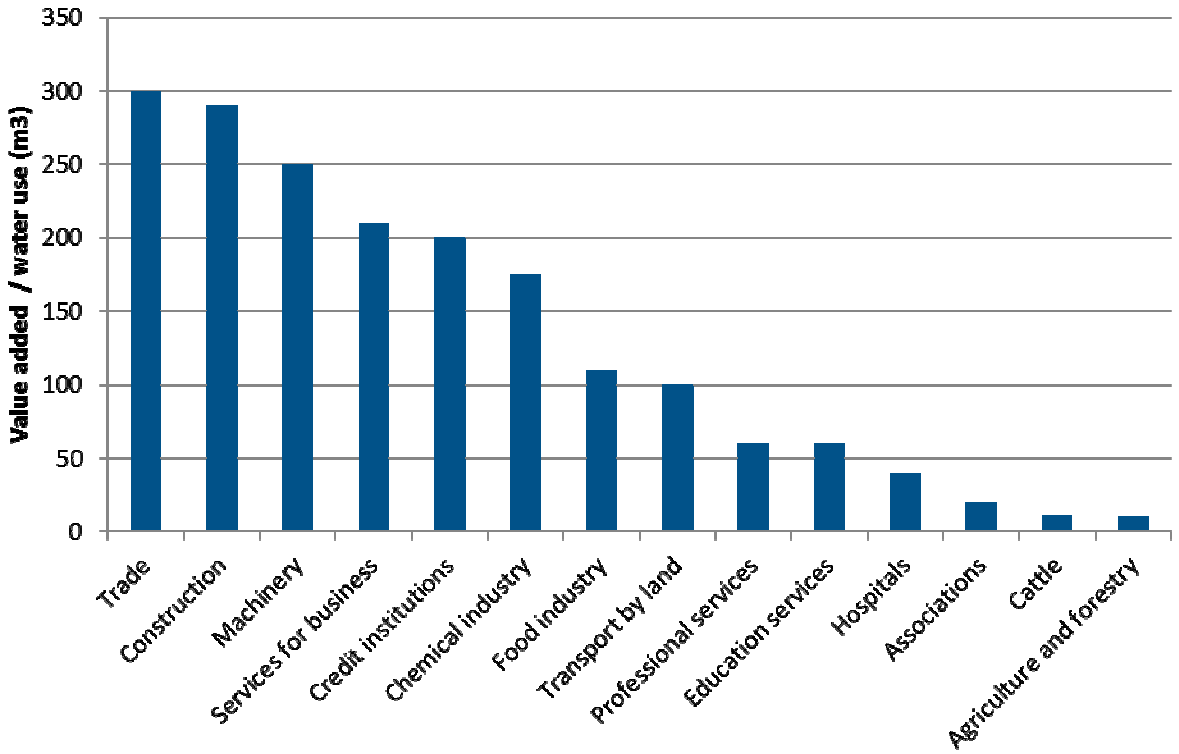


South Africa is net exporter not only because volume of exports > imports, but also because water intensity of exports > imports.

MEXICO

Are scarce water resources allocated efficiently in the Valle de Mexico Watershed?

Productivity by economic activity, 2008 (value-added /m3 water)



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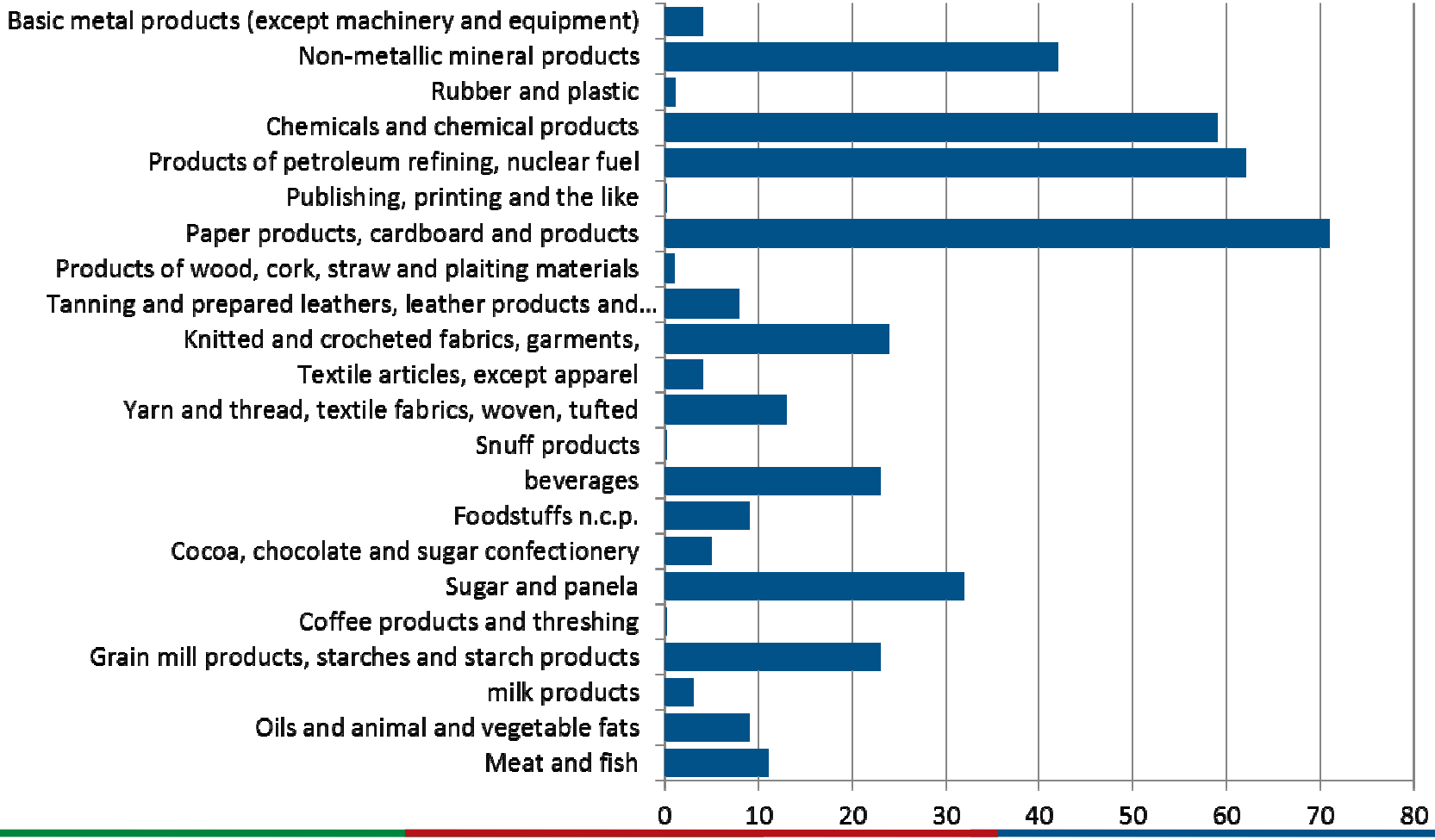
COLOMBIA

Identifying main water users, 2009 (million m3)



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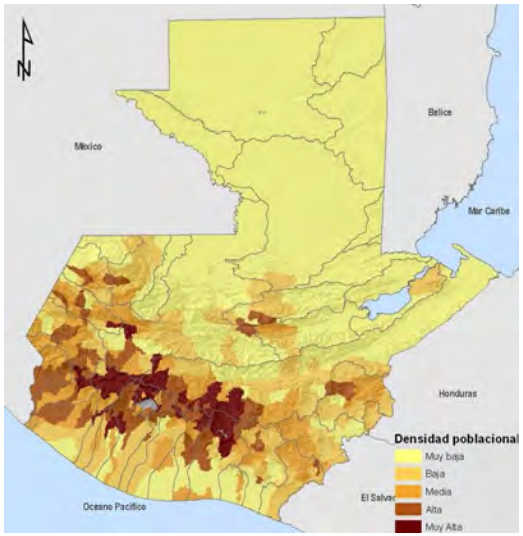
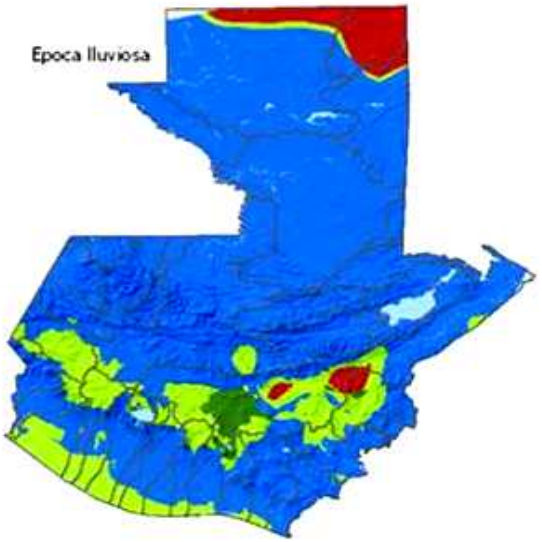
GUATEMALA

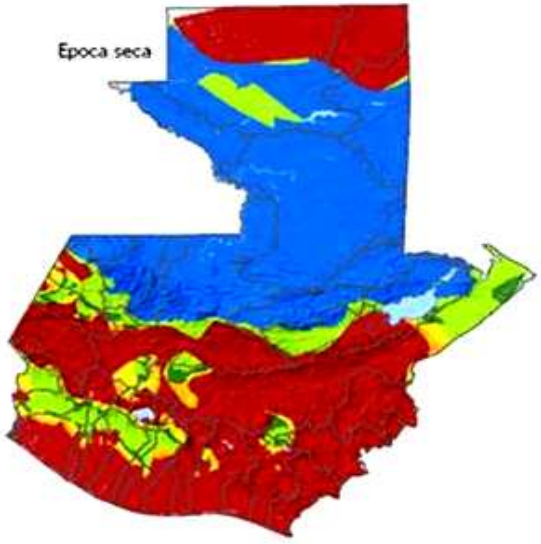
Is water supply enough to population's demands?



Population density, 2005



Water scarcity index, 2005 (rainy season)



Water scarcity index, 2005 (dry season)

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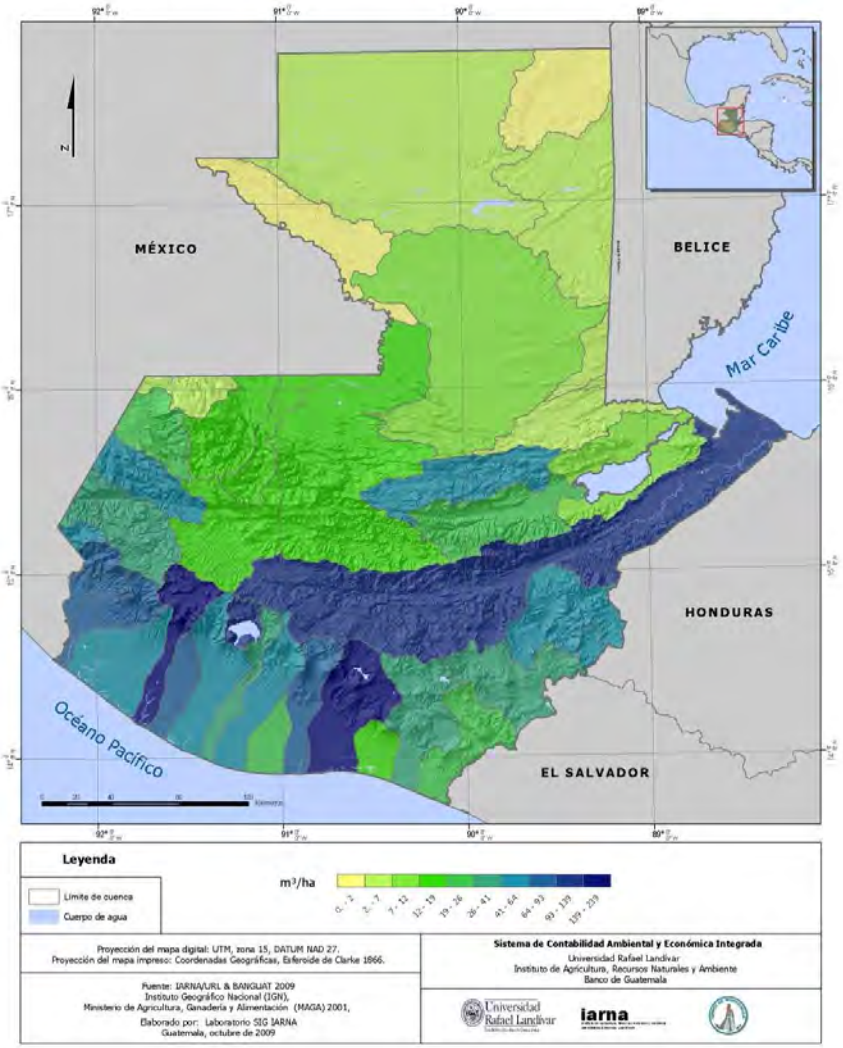
GUATEMALA

What are the pressures in the different watersheds?

Domestic water use in relation to watershed surface (m^3/ha), 2003



WAVES

Thank you!

http://www.wavespartnership.org/waves/